



# **Yoga as an Adjunctive Therapy for Posttraumatic Stress Disorder: Lessons Learned and Next Steps**

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*in collaboration with the Deployment Health  
Clinical Center at Walter Reed Army Medical  
Center*

# Epidemiologic Documentation Studies (EDS)

- ★ First year of EDS includes three pilot studies conducted at military medical facilities:
  - ✗ **AATAPS (Auricular Acupuncture in the Treatment of Acute Pain Syndromes)**, conducted at Malcolm Grow Medical Center at Andrews Air Force Base
    - Status: Closed. Results published in *Military Medicine* (Goertz CM, Niemtzow R, Burns SM, et al. Military medicine. 2006 Oct;171(10):1010-4)
  - ✗ **A Pilot Study of Chiropractic Prone Distraction for Subacute Back Pain with Sciatica**, at National Naval Medical Center
    - Status: In progress
  - ✗ **Yoga as an Adjunctive Therapy for Posttraumatic Stress Disorder: A Feasibility Study**, at Walter Reed Army Medical Center's Deployment Health Clinical Center
    - Status: Closed

# Disclaimer

The views expressed in this presentation are solely those of the author and are not the official position of any associated university, foundation, medical center, or U.S. government department.



# Study Staff

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# Presentation Outline

- ★ Background: Yoga Nidra
- ★ Study Objectives
- ★ Study Design
- ★ Study Subjects
- ★ Study Methods
- ★ Study Outcome Measures
- ★ Demographics and Stats
- ★ Results
- ★ Challenges
- ★ Potential Solutions to the Challenges
- ★ Conclusions
- ★ Next Steps

# Background: Yoga Nidra

- ★ The practice of Yoga Nidra focuses on reducing physical, emotional, mental, and subconscious tension, while teaching one to deeply relax.
- ★ To date, there are no clinical trials that have assessed the effect of Yoga Nidra on symptoms of PTSD; although, several studies have looked at the effect of yoga on stress in general.

# Study Objectives

- ★ Describe rates of intervention compliance
- ★ Describe symptom reductions associated with this intervention
- ★ Discuss the feasibility of conducting a larger clinical trial with an active duty population

# Study Design

★ **Feasibility Study**

★ **A single cohort: (n=7)**

★ **Duration: 9 weeks**

★ **Dosage (Yoga Classes): 18 classes**

- Class Length: 75-90 minutes

★ **Dosage (Home Practice): 41 days**

- Subjects provided with 3 narrated Yoga Nidra CDs to be used on the days that the class did not meet.

# Inclusion Criteria

- ★ Active Duty military personnel
- ★ At least 18 years old
- ★ A minimum score of 40 on the Posttraumatic Stress Disorder Checklist (PCL)

# Study Methods

- ★ **Location:** Yoga Room at the Integrated Cardiac Health Project (ICHP) --- Walter Reed Army Medical Center (Washington, DC)
- ★ **Class Time:** 0800 to 0930
  - ✗ Week 1: Monday, Tuesday, & Thursday
  - ✗ Week 2-8: Monday & Thursday
  - ✗ Week 9: Thursday
- ★ **Class Materials:**
  - ✗ Air Mattress
  - ✗ Blankets
  - ✗ Pillows
  - ✗ Journal
  - ✗ 3 Audio Compact Discs with narrated Yoga Nidra Program

# The Classroom



# Study Methods: Class Structure, an Iterative Process



- ★ **Week 1 (Classes 1-3):** Orientation; Introduction; *Body Awareness & Breathing Awareness and Counting; Developing Inner Resource & Healing Desire*
- ★ **Week 2 (Classes 4-5):** Introduce *Body Sensing*; Introduce concept of working with *Opposite Feelings*
- ★ **Week 3 (Classes 6-7):** Strengthening skills learned, to date
- ★ **Week 4 (Classes 8-9):** Introduce concept of *Opposite Emotions*
- ★ **Week 5 (Classes 10-11):** Introduce concept of *Opposite Beliefs*
- ★ **Week 6 (Classes 12-13):** *Cultivating Inner Strengths*
- ★ **Week 7-9 (Classes 14-18):** *Continue Full Practice - Body Sensing, Body Awareness, Opposite Feelings, Opposite Emotions, Opposite Beliefs, Inner Strength, and Healing Desire*

# Outcome Measures

Measurements	Baseline	Midpoint	Endpoint
PTSD Checklist – Military Version (PCL-M) *	★	★	★
Compliance & Adherence to Protocol Measures*	★	★	★
SF-36v2™ Health Survey: Your Health & Well- Being*	★	★	★
Patient Health Questionnaire	★	★	★
PD-HAT Trauma Questions	★		
State Trait Anxiety Inventory – Trait Version	★		★
Fear of Loss of Vigilance Questionnaire	★	★	★
Expectations of Treatment Efficacy	★		★
Multidimensional Health Locus of Control	★	★	★
Numeric Rating Scale for Pain	★	★	★

\* Primary Outcome Measures

# Demographics & Stats

## ★ Cohort Demographics:

- ✖ 5 male, 2 female
- ✖ 2 Black, 2 Hispanic, 2 White, 1 Pacific Islander
- ✖ Age Range: 24-52 years old
- ✖ Military Status: 6 enlisted, 1 officer

## ★ Compliance:

- ✖ Overall Class Compliance: 67% (60%\*)
- ✖ Overall Home Practice Compliance: 42% (36%\*)

## ★ Dropout Rate: 14% (1 of 7 subjects)

\* Statistic includes the Subject who dropped out after week 5.

# Results: Compliance

## Overall Class Compliance (by subject):

ID#	Cumulative % Compliance
2	78%
7	44%* (22%)
8	<b>94%</b>
9	50%
10	78%
12	61%
13	39%

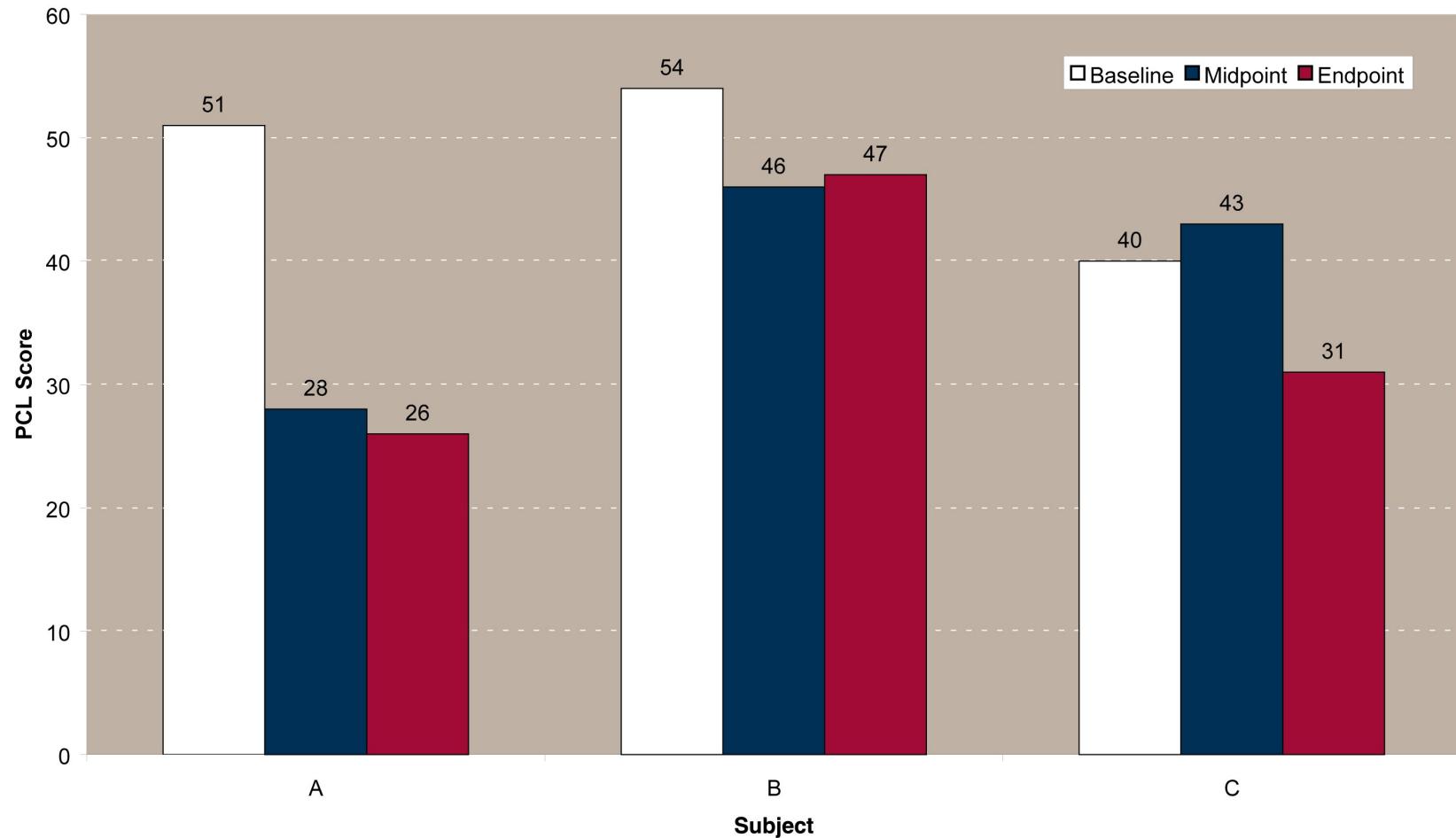
\* Stat reflects compliance from baseline to midpoint. Subject dropped out at Wk 5.

## Overall Home Practice Compliance (by subject):

ID #	Cumulative % Compliance
2	39%
7*	0%
8	20%
9	<b>98%</b>
10	29%
12	63%
13	0%

\* Subject dropped out at Wk 5

# Results: PCL Scores



# Results: Subject Comments

**'I get lost ... my mind wanders ... but when I come back to the practice my thoughts become quiet ... it's empowering knowing you can change the way you feel & your mood.'**

**'... [the classes] are calming and I always have a really good day after the sessions...'**

**[...Inner Resource] calmed me down & brought peace...**

**'It's easier to get to sleep now ... and I sleep longer'**

(at the conclusion of the class)  
**'...I didn't want it to end...'**

(commenting on the class) **'I felt a body shock ... my head had a quick jolt ... my inner resource changed and it was fun ... the body sensation was great ... it was really fun'**

**'I'm experiencing life ... not just living it'**

**'...I feel more accepting of situations in my life that I cannot control...'**

# Results: Study Observations

- ★ At study onset, most Subjects were anxious, stressed, and unable to cope with life's stressors
- ★ Subjects provided candid observations of the practice throughout the study
- ★ Most Subjects experienced feelings of self-efficacy and empowerment
- ★ Most Subjects reported using skills (e.g. Inner Resource) learned in class to work with situations in everyday life
- ★ Post-study several Subjects reported that they continued with the practice via their audio CDs

# Challenges

- ★ Recruitment
- ★ Single Cohort Aspect
- ★ Time Commitment
- ★ Non-Compliance

# Challenges: Recruitment

★ n=7, despite Aggressive Recruitment via:

- ✖ Flyers
- ✖ Emails
- ✖ Grand Rounds Briefing
- ✖ Formation Briefings
- ✖ MD & 1SG Referrals
- ✖ Article in the STRIPE (WRAMC newspaper)
- ✖ In-person recruitment from Primary Care clinic

★ DSM-IV PTSD v PTSD symptomatology:

- ✖ Diagnosable PTSD per the PTSD Symptom Scale - Interview (PSS-I)
- ✖ Some potential subjects with clinical symptomatology of PTSD were ineligible due to the inability to satisfy the DSM-IV Criterion A

# Challenges: Single Cohort

- ★ Goal (*Reality*)
  - ✗ Cohort of 15 (7)
- ★ Class Time
  - ✗ 0800-0930
  - ✗ Summer
- ★ Class Days
  - ✗ Mondays and Thursdays

# Challenges: Single Cohort

## ★ Retention

- Weekly (daily) emails/phone calls/text messages to retain study interest before and throughout the intervention

Week	# of Classes per Week	Days Classes Will Meet
1	Three	Monday, Tuesday, Thursday
2	Two	Monday & Thursday
3	Two	Monday & Thursday
4	Two	Monday & Thursday
5	Two	Monday & Thursday
6	Two	Monday & Thursday
7	Two	Monday & Thursday
8	Two	Monday & Thursday
9	One	Thursday

**All Classes will be from 8:00 AM to 9:30 AM**

# Challenges: Time Commitment

## *By the Numbers*

Weeks	9
Classes	18
Home Practice Days	41
Assessments	3
Total Hours	50 (approx)

# Challenges: Non-compliance

## ★ Reasons for non-compliance

- ✖ Scheduled Leave/Travel
- ✖ Overslept
- ✖ Scheduled (Emergency) Medical Appointments
- ✖ Medication
- ✖ Scheduled Orders: TAD, PCS, etc.
- ✖ Fishing

# Potential Solutions to the Challenges

★ Recruitment

- ✗ Expand Inclusion Criteria to include:
  - Active Duty
  - Reserves
  - Veterans
  - TBI patients
- ✗ Expand Inclusion Criteria to include subjects with:
  - PTSD
  - Symptoms associated with PTSD
  - ASD
- ✗ Multiple Locations
  - Military Medical Facilities
  - VA Medical Facilities

★ Single Cohort

- ✗ Rolling enrollment
- ✗ AM and PM classes

★ Time Commitment/Compliance

- ✗ Optimal Dosages: *How much is enough?*

# Conclusions

- ★ Yoga Nidra may be beneficial to soldiers with significant symptoms of PTSD.
- ★ A randomized controlled clinical trial may be feasible for soldiers and veterans with significant symptoms of PTSD.

# Next Steps

- ★ Future Studies of military populations
  - ✖ RCT of Yoga Nidra as an adjunctive therapy for PTSD
  - ✖ Pilot study of Yoga Nidra's stress/anxiety reducing potential in soldiers Pre-Deployment and Post-Deployment

# Thank you for your time.



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